

<b>Table 1: Typical properties of Hydrogenated Soybean Oil</b> <b>(Archer Daniels Midland (Decatur Ill.) designated by their product number 86-197-0)</b>	
<b>Property</b>	<b>Typical analysis</b>
Lovibond Red Color	2.0 max
Saponification	180 mgKOH/g
Viscosity	60 SUS @ 210F
Hardness (needle penetration)	2 dmm @ 77F
%HFA Max	0.10 max
Flavor Min	Characteristic
P.V. Mil eq/kg/max	1.0 max
F.I. min	8.0 min
Specific gravity (H <sub>2</sub> O = 1)	0.92
% Moisture max	0.05 max
IV by R.I.	2.0 max
Iron (ppm)	0.3 max
Soap (ppm)	3.0 max
Nickel (ppm)	0.02 max
Copper (ppm)	0.05 max
Phosphorous (ppm)	15.0 Max
Residual Citric Acid (ppm)	15.0 max
Mettler Drop Point (F)	155-160
<b>Typical Fatty Acid Composition (by GLC)</b>	
C14:0*	3.0 max
C16:0	3-14
C18:0	82-94
C20:0	5 max

\*number of carbon atoms:number of double bonds (e.g., 18:2 refers to linoleic acid palmitic acid (16:0), stearic acid (18:0), oleic acid (18:1), arachidic acid (20:0) and behenic acid (22:0)

Table 2: Typical properties of Hydrogenated Palm Oil (Custom Shortenings & Oils (Richmond, Va) product Master Chef Stable Flake-P.)	
Property	Typical analysis
Lovibond Red Color	4.0 max
%Free Fatty Acids Max	0.10 max
Flavor Min	Bland
Iodine Value (by R.T.)	5.0 max
Mettler Drop Point (F)	136-142
Saponification	185 mgKOH/g
Viscosity	65 SUS @210 F
Hardness (needle penetration)	2-3 dmm @77F
Typical Fatty Acid Composition (by GLC)	
C8:0 *	0.3% max
C10:0	0.3 max
C12:0	0.5% max
C14:0	1.1% max
C16:0	39.5% min
C18:0	53.0% min
C18:1	1.0% max
C18:2	0.5% max

\*number of carbon atoms:number of double bonds (e.g., 18:2 refers to linoleic acid)

**Table 3: MVTR Evaluation (ASTM D3833)**

Wax Sample	Control Citgo Blend-Kote 467	Marcus Palm Oil Wax	Marcus Nat 155 Soy Wax
Sample Coating Weight lb/1000sqft	5.8	5.6	5.7
MVTR (Grams/100 sq inches in 24 hours)	8.6 ± 0.9	14.5 ± 1.1	10.0 ± 0.4

**Table 4: Repulping Evaluation**

Wax Sample	Control Citgo Blend-Kote 467	Marcus Palm Oil Wax	Marcus Nat 155 Soy Wax
Sample Coating Weight lb/1000sqft	5.7	5.7	5.8
Repulping test results 0= No particles evident 1= small number of small particles evident 2= Moderate number of small particles evident (less than control wax) 3= Very large number of small particles are evident (Control wax)	3	0.5	2

**Fig. 1 Process for the manufacture of Hydrogenated oils**

